

Method and Apparatus for Sampling CMOS Image Sensors

ABSTRACT

A CMOS image sensor circuit includes an array of sensing elements which integrate electrical charge according to the light intensity thereon. In order to measure the accumulated charge voltage at the individual sensing elements, and thus obtain the image data from the array, a sampling circuit is provided. The sampling circuit operates using a high-gain amplification stage and an auto-zero amplifier to perform correlated double sampling, which enables non-linear influences which may arise in the array to be reduced in the measuring process. The sampling circuit can also include a sample and hold circuit arranged to account for a feed-through effect arising from pre-charge circuitry in the sensing elements. The sample and hold circuit can be included within the feed-back loop of the high-gain amplification stage for further increases in linear performance.